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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,451	11/28/2000	Timothy W. Fuehrer	3-48-26-2	6804

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Docket Administrator
Agere Systems Inc.
P. O. Box 614
Berkeley Heights, NJ 07922-0614

EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/723,451	Applicant(s) FUEHRER ET AL.	
	Examiner TUAN A. PHAM	Art Unit 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-23, 25-30 and 33-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Applicant's remark, filed on 11/05/04, with respect to the rejection(s) of claim(s) 1-24 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sun et al. (U.S. Patent No.: 6,212,263) and Herbert (U.S. patent No.: 6,137,392).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 1-6, 9-19, 21-23, 25-30, and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (U.S. Patent No.: 6,212,263, hereinafter, "Sun") in view of Herbert (U.S. patent No.: 6,137,392) and further in view of Pugel et al. (U.S. patent No.: 6,553,216, hereinafter, "Pugel").

Regarding claims 1, 21, and 30, Sun teaches an electrical interface (see figure 6), comprising:

a codec that generates two signal paths that together form an input differential pair (see figure 6, codec 418, col.7, ln.5-18),

a primary inductor and a secondary inductor for operable coupling an input differential signal pair to an output differential signal pair (see figure 6, transformer 504, col.7, ln.5-30), and

a filter that attenuates a signal occurring in the output differential signal pair (see figure 6, HPF 512, line driver 510, col.7, ln.25-37).

It should be noticed that Sun fails to clearly teach a parasitic capacitor operable coupled between the primary inductor and the secondary inductor. However, Herbert teaches such features (see figure 3, parasitic capacitor 71, col.4, ln.16-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Herbert, into view of Sun in order to improve a high dielectric isolation as suggested by Herbert at column 2, lines1-6.

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Sun and Herbert, in combination, fails to teach the capacitor has a capacitance is in the range of approximately 0.5 pF to approximately 2.5 pF. However, Pugel teaches such features (see col.7, ln.10-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Pugel, into view of Sun and Herbert in order to improve a high dielectric isolation as suggested by Herbert at column 2, lines1-6.

Regarding claims 2, 22, and 33, Sun further teaches the interface wherein the filter acts as a low pass filter and wherein the electrical interface further includes a high-pass filter, the low-pass filter and the high-pass filter having overlapping cut-off frequencies (see figure 6, low pass filter 500, high pass filter 512, col.7, ln.5-38).

Regarding claims 3 and 34, Sun further teaches the interface wherein the low-pass filter and the high-pass filter together attenuate signals over a frequency range of approximately 50 kHz to approximately 10 MHz (see figure 3).

Regarding claim 4, Sun further teaches the interface wherein the primary inductor is connected between two signal paths forming the input differential signal pair (see figure 6, transformer 504, output differential pairs signals from line driver 502 to the input primary inductor of transformer 504).

Regarding claims 5 and 23, Sun further teaches the interface wherein the primary inductor forms the primary winding of a transformer (see figure 6, transformer 504).

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Regarding claims 6 and 35, Sun further teaches the interface wherein the secondary inductor is connected between two signal paths forming the output differential signal pair and wherein the secondary inductor forms the secondary winding of the transformer (see figure 6, transformer 504, secondary inductor, differential output at POTS line 202).

Regarding claims 9 and 25, Sun further teaches the interface wherein the filter includes an output attenuation element for operable coupling a signal path of the output differential signal pair to ground (see figure 6, LPF 500, driver 502, connected to ground).

Regarding claims 10 and 26, Sun further teaches the interface wherein the output attenuation element includes a resistor and a capacitor connected in parallel (see figure 6, HPF). It is inherently that the HPF should be including a resistor and a capacitor.

Regarding claims 11 and 27, Sun further teaches the interface wherein the output attenuation element forms a low-pass filter (see figure 6, LPF 504).

Regarding claims 12 and 28, Sun further teaches the interface further including an input attenuation element operable coupled to at least one of the signal paths forming the input differential signal pair (see figure 6, input at codec 418).

Regarding claim 13 and 29, Sun further teaches the interface wherein the input attenuation element includes a resistor and a capacitor connected in series (see figure 6, high pass filter 510, It is inherently that the high pass filter should be including a resistor and a capacitor).

Regarding claim 14, Sun further teaches the interface wherein the input attenuation element forms a high-pass filter (see figure 6, HPF 512).

Regarding claim 15, Herbert further teaches the interface wherein the filter attenuates a common mode signal in the output differential signal pair (see col.11, ln.55-60).

Regarding claim 16, Sun further teaches the interface wherein the interface is adapted for being operable coupled between a codec and a digital circuit (see figure1, processor 100).

Regarding claim 18, Sun further teaches the interface further including an analog front end for operable coupling the codec to a telephone line (see figure 4, codec 418, DSL AFE 420).

Regarding claim 19, Sun further teaches the interface wherein the analog front end includes circuitry for providing power to the codec from the telephone line (see figure 6, codec get the power from telephone line at jack 516).

Regarding claim 36, Sun further teaches the method wherein the filtering step includes the step of attenuating high-frequency signals in the output differential signal pair (see figure 6, HPF 512). It is inherently that the HPF couples to the output, which attenuate the high frequency signals.

Regarding claim 37, Sun further teaches the method further including the step of attenuating low-frequency signals in the input differential signal pair (see figure 5, LPF 500, It is inherently that the LPF couples to the input, which attenuate the low frequency signals).

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4. **Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (U.S. Patent No.: 6,212,263, hereinafter, "Sun") in view of Herbert (U.S. patent No.: 6,137,392) and further in view of Yamaji et al. (5,311,086, hereinafter, Yamaji").**

Regarding claim 38, Sun teaches an electrical interface (see figure 6), comprising:

a codec that generates two signal paths that together form an input differential pair (see figure 6, codec 418, col.7, ln.5-18),

a primary inductor and a secondary inductor for operable coupling an input differential signal pair to an output differential signal pair (see figure 6, transformer 504, col.7, ln.5-30), and

a filter that attenuates a signal occurring in the output differential signal pair (see figure 6, HPF 512, line driver 510, col.7, ln.25-37).

It should be noticed that Sun fails to clearly teach a parasitic capacitor operable coupled between the primary inductor and the secondary inductor. However, Herbert teaches such features (see figure 3, parasitic capacitor 71, col.4, ln.16-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Herbert, into view of Sun in order to improve a high dielectric isolation as suggested by Herbert at column 2, lines1-6.

Sun and Herbert, in combination, fails to teach the parasitic capacitor has a capacitance that is as small as possible while still preventing common mode

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noise signals from interfering with signals being transmitted over said input differential pair. However, Yamayi teaches such features (see col.3, ln.7-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamayi, into view of Sun and Herbert in order to improve a high dielectric isolation as suggested by Herbert at column 2, lines1-6.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (U.S. Patent No.: 6,212,263, hereinafter, "Sun") in view of Herbert (U.S. patent No.: 6,137,392) and further in view of Pugel et al. (U.S. patent No.: 6,553,216, hereinafter, "Pugel") as applied to claim 1 above, and further in view of Embree et al. (U.S. Patent No.: 6,169,762, hereinafter, "Embree").

Regarding claim 20, Sun, Herbert, and Pugel, in combination, fails to clearly teach the interface wherein the analog front end includes a shunt regulator. However, Embree teaches such features (see figure 3, shunt regulator 312).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Embree, into view of Sun, Herbert, and Pugel in order to protect the line side device.

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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (571) 272-7499 and

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Art Unit 2643
August 9, 2005
Examiner

Tuan Pham


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